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Modelling Mover/Stayer Characteristics across the Life Course Using a Large Commercial Sample

Michael Thomas^{1,*}, John Stillwell² and Myles Gould²

¹*Population Research Centre, Faculty of Spatial Sciences, University of Groningen, Groningen, The Netherlands*

²*School of Geography, University of Leeds, Leeds, UK*

ABSTRACT

This paper reports the results of logistic regression models for four consecutive age groups in order to capture variations in the characteristics of movers and non-movers across the life course. The increasing availability of new/alternative sources of microdata, such as Acxiom Ltd's Research Opinion Poll, provides an opportunity to uncover a series of directional associations for covariates that have been largely untested in existing empirical literature. Analysis shows how certain key associational patterns of demographic, socio-economic, housing, and neighbourhood characteristics vary across life-course stages. Whilst the empirical results confirm findings from the literature, they also provide new insights into the relevance of subjective neighbourhood satisfaction, suggesting that across the life course, satisfaction is particularly marked for those who have recently moved, a pattern that happens to be further amplified if the mover is a homeowner. © 2015 The Authors. *Population, Space and Place* published by John Wiley & Sons Ltd.

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Keywords: residential mobility; life course; commercial microdata; neighbourhood satisfaction

INTRODUCTION

Residential mobility is a key mechanism in the evolution of both the size and structure of local populations and is of importance for policy and service planning. Whilst there exists fairly extensive knowledge of the broad demographic and socio-economic individual characteristics that determine the basic propensity to move, further analysis of these and the other more personal/subjective characteristics (e.g. neighbourhood satisfaction and future migration plans) of movers/non-movers, across the life course, is essential if we are to better understand the processes and patterns that underpin residential (im)mobility. This paper uses the Acxiom Research Opinion Poll (ROP), a large commercial microdata set with detailed geographic identifiers and socio-demographic information, to uncover associational patterns specifically related to movers' characteristics vis-à-vis stayers that have, until very recently, been seriously understudied because of the lack of suitable microdata. Logistic regression is used to produce results demonstrating the relative importance of some of the less commonly recorded migration characteristics/behaviours. Future plans to move are found to be negatively associated with recent residential mobility, especially for those in early adulthood, something which, at first sight, appears to contradict the cumulative inertia hypothesis. Furthermore, across the life course, greater neighbourhood satisfaction is found to be consistently and strongly associated with those who have recently moved as opposed to those who remained *in situ*. Interestingly, all things being equal, a positive additional effect is associated with homeowners and a negative additional effect for renters regardless of type. The paper concludes that a greater focus on the

*Correspondence to: Michael Thomas, Population Research Centre, Faculty of Spatial Sciences, University of Groningen, Groningen, The Netherlands.
E-mail: m.j.thomas@rug.nl

analysis of alternative sources of data, and particularly those containing novel subjective behaviours/characteristics, should be a priority for those seeking a more comprehensive explanation of population (im)mobility.

MOTIVATIONS BEHIND THE DECISION TO CHANGE RESIDENCE

Beyond the simple change in numbers, residential mobility operates to transform the demographic character and structure of populations, in some cases affecting real change to the social, cultural, physical, and economic characteristics of an area. The measurement and analysis of (non-)movers, and their respective behaviours/characteristics is '[...] at the heart of decisions around policy development, resource allocation and service delivery, both nationally and locally' (Rees *et al.*, 2009: 1). Research exploring the decision-making processes and experiences of movers has a long history (Thomas, 1938; Rossi, 1955). Yet, although the theoretical and empirical analyses presented in these pioneering works have been tested, rethought, and (re)developed, the fundamental study of (im)mobility remains essential to demography and population geography (Courgeau & Lelievre, 2006; Cooke, 2011).

The decision to change residence is widely considered to be a utility-maximising behaviour, performed by individuals, either independently or collectively within households, reacting to disequilibrium between the current residential environment and a perceived environment elsewhere (Bartel, 1979; Clark & Dieleman, 1996; Clark, 2013). Thus, the decision to move is largely driven by the extent to which the welfare of the individual/household can be maximised, which itself requires the relevant actors to weigh up the expected costs and benefits of moving to an alternative location as opposed to staying put. However, the factors behind the motivation to move are known to greatly vary depending on personal situation/stage in the life course.

Residential mobility has long been theorised to be strongly associated with the transitions between the different stages of the family life course (Rossi, 1955). These transitions, although increasingly diverse in their timing and sequence, remain largely observable in the age-migration schedules (Duke-Williams and Stillwell, 2010; Fielding, 2012). Indeed, although there is no

biological mechanism for the influence of age over the propensity to move, it does act as a rather consistent proxy for the timing of certain life-course transitions/events, which are themselves associated with shifts in household structure (Feijten & Mulder, 2002; Mulder & Wagner, 2010), housing tenure (Boyle, 1993), and income, occupation, and educational attainment (Fielding, 2007).

For instance, we can think of life-course transitions into adulthood associated with either a move from school to university *or* directly into employment, *or* into employment following higher education – where one/each transition may necessitate a change of residence (Champion, 2005; Smith, 2009). Following this stage, the subsequent years, for those in their early 30s to mid-40s, are commonly characterised by relatively sharp reductions in migration and are generally considered the years of family formation/child rearing. The decline is then reduced somewhat, for those aged 45–64, with more recent research linking this with a transition from parenthood to 'empty nesting', prompting the desire to change residence and downsize (Wulff *et al.*, 2010). The transition into retirement and old age may involve small recoveries in the mobility rate associated with exits from the labour market, but with generally greater immobility as older age increases (Fielding, 2012). Finally, residential mobility is observed to increase for those in the very eldest age groups, commonly linked with needs for closer proximity to family and social/health services (Evandrou *et al.*, 2010).

However, although this normative generalisation of the life course into certain follow-on stages, each working to increase/decrease the likelihood of moving, is still clearly observable in 2001 Census data (Duke-Williams & Stillwell, 2010), there is a growing acceptance that an increasing portion of the population do not follow a sequential trajectory. Indeed, drawing on the specific benefits of longitudinal panel data, more recent approaches to mobility analysis have attempted to emphasise diversity in individual and interdependent life course trajectories and events (Clark & Dieleman, 1996; Bailey, 2009; Mulder & Wagner, 2012). Whether unemployment, pregnancy or the birth of a child, union formation/dissolution, or occupational promotion, certain life-course events can occur that, whether positive or negative,

expected or otherwise, operate as the causal motive behind observed residential mobility, where again mobility is understood as a rational utility-maximising outcome that is itself defined according to the selective constraints of the financial and social contexts within which the individual/household find themselves. Of course, the availability of greater resources (e.g. income, asset wealth, and education) is essential for enabling individuals/households to act on any desired move.

Drawing on the earlier discussion, the analysis that follows seeks to disentangle the age effect from what are the real influences behind residential mobility, thereby uncovering the associational relationships thought to be of importance for informing mobility outcomes at different stages of the life course. As Clark (2013: 327) makes clear, 'it is not age per se that is creating the mobility process but rather the events that occur within the ageing process'. With the availability of ROP microdata, we are able to analyse the differing characteristics of movers versus stayers at broad stages in the life course, exploring the role of several selective demographic and socio-economic factors, as well as the more personal/subjective characteristics of individuals, such as neighbourhood satisfaction and plans for future mobility.

DATA AND MEASURES

The ROP is a large voluntary paper-based survey of individual household representatives distributed biannually across Great Britain (GB). Whilst the exact operational surveying details are not disclosed, the company employs a number of address sources to ensure that their response is geographically even and reasonably representative of the GB demographic (18+) profile (Rees *et al.*, 2009). Thompson *et al.* (2010: 13) acknowledge Acxiom's operational success and note that for the 2009 ROP: '[...] only 0.4% of all Middle Super Output Areas (MSOAs) across GB did not return a response'. Beyond its geographic coverage and overall sample size, the ROP includes approximately 130 questions covering 26 broad topics including demographics, shopping, local area, environment, outgoings, occupation, home, leisure, and education and health. In surveys between January 2005 and January 2007, specific

questions were included relating to residential mobility: 'When did you move to this address? (month and year)', 'Please tell us the house number and postcode of your previous address', and 'Are you planning to move in the next: 0–3 months; 4–6 months; 7–12 months; No?' This information, when combined with additional micro characteristics, creates considerable potential for the analysis of residential movement.

Because of a requirement for variable consistency and the limited period over which Acxiom asked questions specific to migration, our analysis uses three tranches of ROP data for GB collected in January 2005, 2006, and 2007. Pooling these data results in a large analytical data set, where a mover is defined as an individual who has changed address within 12 months of survey completion and provided full address details ($n=9,354$) and where non-movers make up the remaining sample ($n=339,599$). The original sample size for the raw pooled data was 950,658 records, but because of missing and/or 'impossible' values, and following extensive efforts to clean and retain as much of the raw sample as possible, the analytical sample size reduces to the 348,953 records used here and is the same as that used in the model-based validation exercise reported by Thomas *et al.* (2014).¹

The ROP only allows for a single household respondent, and therefore, multiple members of the household are not measured, although general characteristics about the household such as gross annual household income and housing tenure are. In selecting explanatory variables, we chose those that are commonly observed to influence (non-)mover propensities: age, sex, ethnicity, marital status, occupational class, gross annual household income, educational attainment, and housing tenure and type. In addition, subjective/personal characteristics, including neighbourhood satisfaction and plans for future moves, and functional neighbourhood classifications measured using the Census 2001 Output Area Classification (Vickers & Rees, 2007), are included together with an indicator of survey year.

MODELLING FRAMEWORK AND ANALYSIS

Four logistic regression models (Agresti, 2002) have been specified and estimated (Table 1) in order to explore variations in the associational

Table 1. Residential mobility across the broad stages of life course: constant, year of survey indicator, and overall model fit statistics.

Predictor	Model 1: ages 18–29			Model 2: ages 30–44			Model 3: ages 45–64			Model 4: ages 65+		
	Beta	SE	Odds	Beta	SE	Odds	Beta	SE	Odds	Beta	SE	Odds
Constant	–2.806*	0.185		–4.161*	0.151		–5.081*	0.179	0.006	–5.763*	0.349	
Data set (reference: January 2005)												
January 2006	–0.727*	0.078	0.483	–0.516*	0.057	0.597	–0.451*	0.071	0.637	0.580*	0.117	0.560
January 2007	–1.124*	0.045	0.325	–0.708*	0.038	0.493	–0.228*	0.045	0.796	–0.139	0.163	0.871
Overall model fit statistics												
Null deviance			18,557 on 32,367df			30,252 on 103,902df			24,187 on 142,864df			9,060.6 on 69,816df
Residual deviance			17,233 on 32,315df			28,771 on 103,854df			23,326 on 142,821df			8,458.9 on 69,776df
Improvement (χ^2)			61.110*, df = 13 ^a			74.479*, df = 9 ^a			10.673*, df = 3 ^a			601.633, df = 40 ^b
AIC			17339			28869			23414			8540.9

NB: Model 1, $n = 32,368$; Model 2, $n = 103,903$; Model 3, $n = 142,865$; Model 4, $n = 69,817$.^aImprovement on the main-effects-only model.^bImprovement on the null model.

*Parameter is significant at the 95% level.

patterns of demographic, socio-economic, and behavioural/lifestyle characteristics of movers/non-movers for four major life-course stages: 18–29, the transition into adulthood with the associated high levels of mobility (Model 1); 30–44, traditionally the stage of family formation and reductions in mobility (Model 2); 45–64, a stage of reduced decline in mobility (Model 3); and 65+, the transition into retirement/old age and relatively low propensities to move (Model 4). Each model is designed to accommodate potential differential effects of age at smaller intervals within these broader life-course groupings. The rationale behind this approach, rather than a single all-embracing model, is related to the modelling of interaction effects. By separating the models by life-course stage, interactions specific to a single stage can be modelled, whereas an all-embracing model removes this ability and would require a greater number of model interaction terms, thus greatly increasing the model complexity and risk of model sparsity.

Because all the predictor variables are categorical, reference groups are specified as the median value for ordinal covariates and the modal value for nominal covariates. Grouped parameter Wald tests are used in order to assess the contribution of sets of parameters, whilst holding others fixed, in the fitted multivariate model (e.g. testing the contribution of all the dummy terms associated with a categorical predictor variable together) (Heeringa *et al.*, 2010). Finally, to test and compare overall model fit, the Akaike information criterion is used, a statistic that checks for improvement in model fit whilst effectively penalising for greater model complexity (Agresti, 2002).

MODEL RESULTS

The substantive model results are broken down according to four covariate themes (Tables 2–5), following an initial presentation of the overall model fit statistics, constant, and dummy indicator variables for survey year (Table 1). Table 1 suggests that all of our models are a statistically significant improvement on simpler models and that the inclusion of the survey indicator variable is justified.

Demographic Characteristics

Although the models are themselves broken down according to rather broad life course stages,

Table 2. Demographic characteristics of residential mobility.

Predictor	Model 1: ages 18–29			Model 2: ages 30–44			Model 3: ages 45–64			Model 4: ages 65+		
	Beta	SE	Odds	Beta	SE	Odds	Beta	SE	Odds	Beta	SE	Odds
Age												
Model 1 (reference: 18–19)												
20–24	–0.087	0.203	0.917									
25–29	–0.262*	0.126	0.770									
Model 2 (reference: 30–34)												
35–39				–0.725*	0.040	0.484						
40–44				0.001	0.037	1.001						
Model 3 (reference: 45–49)												
50–54							–0.198*	0.046	0.820			
55–59							0.029	0.042	1.029			
60–64							–0.031	0.042	0.970			
Model 4 (reference: 65–69)												
70–74										–0.461*	0.086	0.631
75–79										–0.089	0.079	0.915
80+										0.086	0.076	1.090
Gender (reference: female)												
Male	–0.258*	0.082	0.772	–0.001	0.038	0.999	–0.185*	0.044	0.831	–0.189*	0.073	0.827
Ethnic group (reference: White)												
Asian	–0.342*	0.135	0.710	0.181	0.108	1.199	0.227	0.187	1.255	0.118	0.419	1.125
Black	–0.298	0.191	0.743	0.123	0.139	1.131	0.390	0.200	1.477	0.290	0.596	1.337
Other	–0.246	0.142	0.782	0.123	0.121	1.130	0.008	0.176	1.008	–1.993*	1.001	0.136
Marital status (reference: single)												
Married	0.141	0.072	1.151	–0.139*	0.054	0.870	–0.063	0.077	0.939	0.255	0.160	1.291
Living with partner	0.493*	0.057	1.637	0.326*	0.059	1.385	0.399*	0.097	1.490	0.933*	0.238	2.542
Divorced/separated	–0.046	0.165	0.955	0.405*	0.062	1.500	0.395*	0.077	1.484	0.301	0.178	1.351
Widowed	–0.351	0.432	0.704	–0.918*	0.359	0.399	0.249*	0.114	1.282	0.496*	0.165	1.643
Gender × marital status												
Male, married	0.272	0.140	1.313									
Male, living with partner	0.475*	0.110	1.609									
Male, divorced/separated	0.504	0.395	1.655									
Male, widowed	–10.699	101.537	0.000									

NB: 95% confidence intervals can be calculated as follows: coefficient (Beta) – 1.96 * SE (lower boundary) and coefficient (Beta) + 1.96 * SE (upper boundary), where SE is the standard error.

*Parameter is significant at the 95% level.

Table 3. Socio-economic characteristics of residential mobility.

Predictor	Model 1: ages 18–29			Model 2: ages 30–44			Model 3: ages 45–64			Model 4: ages 65+		
	Beta	SE	Odds	Beta	SE	Odds	Beta	SE	Odds	Beta	SE	Odds
Occupation (reference: higher managerial administrative and professional occupations)												
Not economically active	0.013	0.056	1.013	0.041	0.049	1.042	0.023	0.058	1.023	–0.268	0.191	0.765
Routine and manual occupations	0.078	0.074	1.081	–0.005	0.058	0.995	0.132*	0.064	1.141	–0.141	0.217	0.868
Intermediate occupations	0.141*	0.056	1.152	0.110*	0.045	1.117	0.095	0.060	1.100	–0.164	0.262	0.849
Annual gross household income (reference: £20,000–29,999)												
Up to £9,999	–0.042	0.069	0.959	0.227*	0.057	1.255	0.049	0.069	1.050	0.164	0.179	1.179
£10,000–19,999	–0.020	0.059	0.980	0.141*	0.044	1.151	0.001	0.057	1.001	0.169	0.154	1.184
£30,000–39,999	0.098	0.067	1.103	–0.129*	0.054	0.879	–0.018	0.063	0.982	–0.320*	0.162	0.726
£40,000–49,999	0.046	0.059	1.047	0.088	0.049	1.092	–0.023	0.058	0.977	0.227	0.148	1.254
£50,000+	0.154*	0.049	1.166	0.043	0.042	1.044	–0.038	0.051	0.963	0.004	0.117	1.004
Highest qualification (reference: five or more General Certificates of Secondary Education)												
No formal qualifications	0.288*	0.044	1.334	0.165*	0.035	1.179	0.119*	0.043	1.126	0.072	0.081	1.074
2+ 'A' levels	0.163*	0.050	1.177	0.143*	0.042	1.154	0.149*	0.046	1.161	0.060	0.085	1.062
First degree and higher	–0.134*	0.058	0.874	–0.149*	0.048	0.862	–0.093	0.050	0.911	–0.203*	0.088	0.816

*Parameter is significant at the 95% level.

Table 4. Housing characteristics of residential mobility.

Predictor	Model 1: ages 18–29			Model 2: ages 30–44			Model 3: ages 45–64			Model 4: ages 65+		
	Beta	SE	Odds	Beta	SE	Odds	Beta	SE	Odds	Beta	SE	Odds
Tenure (reference: own home)												
Council rent	0.518*	0.210	1.678	0.425*	0.197	1.530	–0.161	0.282	0.852	0.298*	0.132	1.347
Housing association rent	0.464	0.259	1.590	0.479*	0.230	1.614	0.553	0.282	1.738	0.617*	0.141	1.853
Private rent	0.669*	0.198	1.952	1.266*	0.188	3.545	1.362*	0.223	3.902	0.900*	0.115	2.460
Type of home (reference: semi-detached)												
Detached	–0.182*	0.090	0.833	0.437*	0.053	1.549	0.278*	0.068	1.320	0.772*	0.141	2.164
Terraced	0.213*	0.054	1.238	–0.033	0.048	0.967	0.163*	0.064	1.177	0.198	0.159	1.219
Bungalow	0.038	0.142	1.039	0.434*	0.090	1.544	0.995*	0.069	2.705	1.484*	0.122	4.409
Maisonette	0.318*	0.124	1.374	–0.010	0.136	0.990	0.324*	0.162	1.382	0.755*	0.327	2.127
Flat	0.642*	0.063	1.900	0.301*	0.067	1.351	0.708*	0.077	2.030	1.595*	0.143	4.927
Output Area Classification super-group level (reference: typical traits)												
Blue-collar communities	–0.098	0.065	0.907	–0.159*	0.057	0.853	–0.276*	0.075	0.759	–0.308*	0.142	0.735
City living	–0.172	0.096	0.842	–0.346*	0.103	0.707	–0.135	0.110	0.874	–0.121	0.158	0.886
Countryside	0.197*	0.087	1.218	0.055	0.066	1.056	0.103	0.073	1.108	0.064	0.119	1.066
Prospering suburbs	0.191*	0.072	1.210	0.016	0.056	1.016	–0.046	0.069	0.955	–0.268*	0.118	0.765
Constrained by circumstances	–0.163*	0.072	0.849	–0.043	0.065	0.958	–0.066	0.077	0.936	–0.330*	0.133	0.719
Multicultural	–0.306*	0.088	0.737	–0.315*	0.082	0.730	–0.483*	0.109	0.617	–0.737*	0.220	0.478
Age × tenure												
20–24, council rent	–0.919*	0.251	0.399									
25–29, council rent	0.315	0.166	1.371									
20–24, rent housing association	–0.501	0.334	0.606									
25–29, rent housing association	0.021	0.219	1.021									
20–24, rent private	–0.034	0.229	0.966									
25–29, rent private	0.038	0.146	1.039									
35–39, council rent				0.334*	0.106	1.396						
40–44, council rent				0.078	0.104	1.082						
35–39, rent housing association				0.117	0.133	1.124						
40–44, rent housing association				–0.011	0.126	0.989						
35–39, rent private				0.591*	0.081	1.806						
40–44, rent private				–0.103	0.078	0.902						

*Parameter is significant at the 95% level.

Table 5. Subjective/evaluative characteristics of residential mobility.

Predictor	Model 1: ages 18–29			Model 2: ages 30–44			Model 3: ages 45–64			Model 4: ages 65+		
	Beta	SE	Odds	Beta	SE	Odds	Beta	SE	Odds	Beta	SE	Odds
Plan to move in the next 12 months (reference: no)												
Yes	–0.211*	0.052	0.810	–0.109*	0.055	0.896	0.043	0.081	1.044	–0.130	0.207	0.878
Like your neighbourhood (reference: no)												
Yes	0.745*	0.144	2.107	1.019*	0.136	2.769	0.792*	0.152	2.208	0.745*	0.220	2.106
Tenure × like your neighbourhood												
Council rent, likes neighbourhood	–0.417*	0.193	0.659	–0.502*	0.205	0.605	0.265	0.288	1.303			
Rent housing association, likes neighbourhood	–0.458*	0.233	0.633	–0.427	0.241	0.652	–0.304	0.294	0.738			
Rent private, likes neighbourhood	–0.554*	0.176	0.574	–0.656*	0.192	0.519	–0.598*	0.229	0.550			

*Parameter is significant at the 95% level.

each stand-alone model was designed to accommodate for potential age differentials at the smaller intervals found *within* the specific life course groupings. Drawing on this, Table 2 provides evidence that the greatest mobility propensity within the early adulthood stage is for those in the 18–19 age group, an age conventionally associated with moves away from the parental home to higher education, whereas at the opposite end of the life course, there is significantly greater immobility for those in their 70s compared with individuals in the immediate years following retirement. Beyond the expected increase in immobility for more elderly cohorts, we expect the ages associated with retirement, such as those associated with moves to university, to reflect a greater propensity to move relative to other broad age groups (Evandrou *et al.*, 2010).

As has been shown in previous analysis (Duke-Williams & Stillwell, 2010), a greater likelihood of mobility is observed for women in all life course stages apart from those in their 30s and early 40s, when family formation and childbearing are taking place. The relative plateauing of female mobility can be thought of as being linked to the ways in which social and cultural norms, household/family-based phenomena, and mobility behaviours/propensities are differentiated by gender (Boyle *et al.*, 2001; Magdol, 2002).

According to research by Stillwell and Hussain (2010) and Finney and Simpson (2008), almost all ethnic minority groups in Britain (bar certain Asian groups) are characterised by higher rates of residential mobility than the White-British majority, although this is partly due to the White-British majority being, on average, older and therefore less mobile. The results in Table 2 show that there are clear patterns in mobility and immobility according to ethnicity, which vary through the life course. A greater likelihood of mobility for individuals from the White majority background than those in the non-White groups is revealed, with a particularly strong, and statistically significant, reduction in mobility found for individuals at ages 18–29 from Asian ethnic backgrounds. However, this relationship reverses through the stages of the life course, with those from White ethnic backgrounds aged 30–44, 45–64, and 65+ being less mobile than those in other ethnic groups. The exception being those who are classified as ‘other’ in the post-retirement/elderly (aged 65+) stages, where a substantial level

of immobility is evident compared with the 'White' reference group. However, the large standard error suggests uncertainty and so should be treated with caution.

Although changes in marital status cannot be inferred given the cross-sectional nature of the ROP, marital status does provide a reasonable proxy for family formation, cohabitation, and linked decision-making. For cohabiting couples, decision-making is expected to be made collectively, informed by a bargaining process that involves the weighing of positive/negative implications of moving/staying for each partner. The collective bargaining can be particularly complex for dual-career households (Abraham *et al.*, 2010). However, a focus on the current marital status of (non-)movers does reveal some patterns that vary across the life course. For those in early adulthood, the sole substantive and statistically significant difference is found between individuals living with a partner and the reference group singletons, with the former showing greater mobility than the latter. In this young age group, it is likely that partnership formation is a relatively recent occurrence, wherein the recorded move could well be directly tied to the event of cohabitation. To explore this further, a gender/marital status interaction was included, with the Wald test suggesting a significant contribution to the model at this stage in the life course (Wald $\chi^2 = 19.0$; $df = 4$; $p < 0.01$). The addition of the interaction term suggests that the relationship is further amplified for men; in other words, there is a positive additional effect for men who live with their partners compared with women who live with theirs.² Indeed, men living with their partners are 2.03 ($\exp^{0.71}$) times more likely to have moved within the last 12 months than the reference group, women who are single.³ This compares with women living with their partners who are 1.64 times more likely to have moved than single women. Given that cohabitation would necessitate at least one individual changing residence, these findings suggest a slightly greater propensity for men to 'move in', although this interaction is not found to be significant for any of the later life-course stages.

Observable differences between the marital statuses increase somewhat in the more stable family-forming/childrearing stages of life (Model 2). Married people, perhaps reflecting this apparent stability, are found to be 0.87 times as likely to

move as those who are single. However, those living with their partners experience higher rates of mobility than singletons [odds ratio (OR), 1.39]. Divorced/separated people also have greater mobility than single people, where, as with family/household formation, the breakdown of relationships will in most cases also necessitate the move of one, and possibly both, of the individuals (Geist and McManus, 2008; Mulder and Wagner, 2010). Being widowed is also found to have a substantial effect, with widowers having greater levels of immobility when compared with singletons, although this estimate is based on a small number of recorded widowers in this age group. The relationship roughly follows the same pattern in the later stages of the life course, with the exception being the rather unsurprising increase in mobility associated with widowhood, something known to influence levels of residential mobility (Chevan, 2005).

Socio-economic Characteristics

The literature suggests occupational class, household income, and educational attainment all play important selective roles in residential mobility (Borjas *et al.*, 1992; Fielding, 2007). Although greater mobility for intermediate occupational groups in the 18–29 and 30–44 age groups, compared with the higher-level occupations, is statistically significant, the magnitude of the effect is comparatively small, with ORs of 1.15 and 1.12, respectively (Table 3). Likewise, those in routine and manual occupations between the ages of 45 and 64 also experience a statistically significant, yet seemingly small, increase in mobility when compared with the highest occupational groups (OR = 1.14). Although it remains relatively trivial compared with the other characteristics included in the life course models, the income variable suggests those in early adulthood exhibit a relatively linear relationship, with greater household income associated with greater mobility. This is a commonly theorised relationship, with greater financial resources, indicated by a higher income, leading to improved choice within the housing market as well as an increased ability to cover the financial costs associated with changing residence. Yet for those in the 30–44 and 65+ age groups, we see this admittedly slight association shift into more of a U-shaped relationship, with small increases in mobility for those in the

lower-income and upper-income groups, when compared with the middling income levels. Previous studies of migration propensities in midlife (Wulff *et al.*, 2010) and later life (Evandrou *et al.*, 2010) have also shown household income to have a rather marginal association.

Generally speaking, these findings contradict the conventional theories that suggest that we should expect residential mobility to increase with occupational class, household income, and educational attainment. Yet, although this may be so, it is important to keep this study in context. Indeed, the analysis concentrates on variations in the associational patterns of demographic, socioeconomic, and lifestyle/behavioural characteristics for all movers, as compared to non-movers, with no differentiation for the distance moved, for which the average across all residential movers modelled here is assumed to be relatively short given the well-known frictional effect of distance on mobility (Stillwell, 1991). If residential movers were to be modelled separately as short-distance movers, which are typically thought to be more strongly associated with housing markets, and longer-distance migrants, which are again theorised to be more closely tied to the labour market, the expectation might be to find the latter group varying considerably, in terms of income and occupation, from those in the former short-distance group (Gordon, 1982). Certainly, multilevel analysis of distances moved would support this assertion (Thomas *et al.*, 2015).

Housing Market Characteristics

Following Gordon's (1982) suggestions, if the proposed effects of the labour-market-relevant variables are suppressed in these models, owing to the greater likelihood of recorded movers being of short distance and residential in nature, we can be forgiven for supposing that the effects of the housing-market-orientated characteristics will be amplified. To a large extent, Table 4 supports this assertion. Tenure is found to be one of the most substantively important and highly significant characteristics. Across the board, from those in the stages of early adulthood right through to post-retirement, there appears to be greater mobility for individuals who rent their accommodation than those who own it, an observation that is by no means new. Indeed, home

ownership is a particularly inflexible tenure type where financial costs (e.g. high transaction costs, transfer taxes, and mortgage costs) and ownership benefits (e.g. security of tenure and protection against eviction) work to reduce regular residential movements. Conversely, private renting is seen to be the most flexible tenure type, reflecting lower movement costs, short-term contract durations, and, for some, insecurity of tenure, which all work to encourage greater movement propensities (Mulder, 2013).

Consequently, the greatest differences are observed for private renters and homeowners. Private renters are found to be almost twice as likely to move when compared to homeowners in the early stages of adulthood, with the magnitude of the relationship increasing in the 30s and early 40s (3.5 times more likely), and again in the middle-age/pre-retirement stage where the likelihood of moving is almost four times greater for private renters. The extent of the greater likelihood of mobility observed for private renters decreases somewhat ($OR = 2.46$) in the final stage of post-retirement and old age but remains strongly predictive of greater mobility. Increased mobility is also observed for those who rent from the council, with the non-significant exception of individuals aged 45–64, and those who rent from housing associations. Interestingly, Wald tests suggest that the mobility rates associated with different tenure groups significantly vary according to age *within* the early adulthood stage (Model 1, Wald $\chi^2 = 29.5$; $df = 6$; $p < 0.01$) and the family-forming/childrearing stage (Model 2, Wald $\chi^2 = 61.4$; $df = 6$; $p < 0.01$).

Given the inclusion of the interaction terms, the main effects of tenure for those in the 18–29 and 30–44 age groups should be interpreted as the effects for individuals in the reference age brackets, 18–19 in Model 1 and 30–34 in Model 2. Those who record themselves as homeowners at the age of 18–19 are likely to be living in their parents' (owned) home. Looking at these finer age group variations, council tenants aged 18–19 are estimated to be 1.68 times more likely to have moved than the reference group, homeowners aged 18–19, whereas council tenants aged 20–24 actually buck the general trend with the likelihood of having moved estimated to be 0.61 times that of the reference group. Conversely, council tenants aged 30–44 are found to have the same directional associations, with greater mobility

found when compared with homeowners, although the magnitude of the relationship is weaker for those aged 35–39 who are shown to be only 1.13 times more likely to have moved than homeowners. This pattern is also significant for private renters aged 35–39, where again, *ceteris paribus*, they are slightly less likely to have moved than private renters aged 30–34, when compared with homeowners of the same age. In terms of the bigger picture, the greater mobility for council tenants is particularly interesting as they have traditionally been associated with lower rates of mobility, although, more specifically at the inter-regional level, this is partly linked to the rather rigid housing allocation system employed in the UK (Hughes & McCormick, 2000). However, such structural restrictions are greatly reduced for localised moves, and therefore, given the likelihood that most moves will be short distance in nature, the higher mobility associated with council tenants, in comparison with homeowners, is not entirely unexpected.

Housing type is also found to be highly influential for patterns of (im)mobility, although the type-specific relationships vary depending on the broad life-course stage. For the youngest stage, mobility is significantly higher for those in flats (OR = 1.90), maisonettes (OR = 1.37), and terraced housing (OR = 1.24) and significantly lower for those in detached housing (OR = 0.83), when compared with those in semi-detached housing. Given that these are people at the start of their housing/occupational careers, it is unsurprising that individuals in the housing types we generally associate with lower transaction costs reflect a greater likelihood of moving. The picture becomes a little more mixed in the middle stages (Models 2 and 3), with individuals from detached accommodation now reflecting, on average, a greater propensity for residential mobility than those in semi-detached housing. This relative increase in mobility associated with detached housing, and the relative decrease for those living in flats when compared with semi-detached accommodation, is likely to reflect the importance of family formation, especially for those aged 30–45, and the necessary housing adjustments that changes in family composition are known to entail. Indeed, although the ROP contains no direct measure of dependent children in the household, pregnancy, and/or the birth of children, such factors are common at this stage and are known

to alter housing preferences in favour of greater space, quality, safety, and security (Mulder, 2013). For those in the final stages of the life course, the substantive importance of housing type increases still further with rather pronounced rates of mobility associated with bungalows (OR = 4.41) and flats, the latter suggesting a mobility propensity almost five times greater than that of the reference category, semi-detached. It is fair to assume that the housing needs for retired and elderly individuals, in terms of space, are somewhat reduced when compared with individuals in earlier life-course stages. Moreover, given the onset of old age and the associated deterioration in physical ability, the shift towards single-level accommodation types is also to be expected.

The effect of individuals' current neighbourhood type can, to a certain extent, be seen to further condition the likelihood of undertaking a residential move. Irrespective of life-course stage, individuals living in 'multicultural areas' are found, on average, to have the lowest levels of mobility. Similarly, individuals living in 'blue-collar communities', excluding those in early adulthood, can also be seen to have reduced rates of mobility, when compared with individuals living in areas classified as 'typical traits'. The remaining effects associated with neighbourhood type, as observed in previous studies (Kearns & Parkes, 2003; van Ham & Clark, 2009; Rabe & Taylor, 2010), are small when compared with the individual/household demographic, socio-economic, and behavioural/lifestyle characteristics. Yet it is possible that the technical limitations associated with the inclusion of neighbourhood type in the manner presented here, as a series of fixed-effects dummy term variables within a single-level modelling framework, are working to obscure substantively interesting neighbourhood characteristic/context influences on residential (im)mobility.

Subjective/Evaluative Characteristics

Finally, we are left with the seemingly more nuanced characteristics of movers and non-movers, namely those associated with greater conjecture and subjectivity. Individuals' moving desires, expectations, and plans are of clear importance to the study of residential (im)mobility. However, aside from a couple of key contributions on the interrelationship between pre-move desires and

subsequent moving behaviour (Lu, 1998; Coulter *et al.*, 2011, 2012), the focus on such factors remains surprisingly lacklustre in the empirical literature. Unfortunately, the ROP's cross-sectional design makes it impossible to perform studies of pre-move desires and subsequent mobility. However, we are able to uncover whether individuals who have moved within the last 12 months are more/less likely to be planning a further move within the next 12 months.

The directional relationships (Table 5), aside from those in the 45–64 stage, appear to suggest that individuals are less likely to be planning a future move if they have already recently moved. This observation is particularly important, and statistically more stable, for those in the early adulthood phase, where individuals planning to move are, on average, 0.81 times as likely to have already moved in the 12 months prior to surveying. At first sight, this appears to contradict the cumulative inertia hypothesis, wherein individuals with the shortest durations of residence are thought to be the most likely to move again, a theory that has been important in explaining the high correlation between out-migration and in-migration rates at aggregate levels (Cordey-Hayes & Gleave, 1974).

However, micro-level studies, with their notable inclusion of important covariates such as age, have shown that the relationship between residential duration and the likelihood of considering a future move does not follow a simple monotonic relationship, that is, with probabilities of moving decreasing as duration increases. For instance, a micro-level analysis by Gordon and Molho (1995: 1970) suggests that the likelihood of considering a move is lowest for those with the shortest durations (e.g. within the first 12 months), given that they are in a residential environment that only a year or so earlier suited their residential preferences and encouraged their move. Consequently, it could be argued that the residential moves already performed by individuals, particularly in the early adulthood stage, are to a certain extent successful in fulfilling the factors that motivated their move in the first place. At the early adulthood stage, interrelated events such as leaving the parental home, going to university, starting a career, and forming relationships resulting in cohabitation are all factors that stimulate residential mobility. It follows, therefore, that they are all factors that can be

satisfied, to varying degrees, by residential mobility. Additionally, given that a residential migrant would, by definition, have lived at the address for fewer than 12 months, the financial requirements of a further move, within such a short time frame, would undeniably weigh heavily on any plan for a further move. Of course, planning to move is a more definitive statement than simply desiring a move and would suggest that more serious practical considerations, such as the financial implications, have been made (Lu, 1998; Coulter *et al.*, 2011).

The importance of the neighbourhood, in terms of subjective measures of satisfaction (Clark & Ledwith, 2006; Feijten & van Ham, 2009; Hedman *et al.*, 2011), suggests that, aside from household needs and preferences, (dis)satisfaction with the wider locality is fundamental in motivating a decision to move/stay, with greater satisfaction being tied closely to a greater likelihood of remaining *in situ*. However, the processes that underpin neighbourhood satisfaction are clearly complex and dynamic in nature, with variations likely to be operating across a variety of levels from the individual through to the household, neighbourhood and indeed beyond. (Parkes *et al.*, 2002). It is perhaps not surprising that the relationship between neighbourhood satisfaction and residential mobility is found to vary significantly according to tenure type, although only for those aged 18–29 (Wald $\chi^2 = 10.2$; $df = 3$; $p < 0.05$), 30–44 (Wald $\chi^2 = 12.6$; $df = 3$; $p < 0.01$), and 45–64 (Wald $\chi^2 = 10.8$; $df = 3$; $p < 0.05$). Across the various stages of the life course, people who are satisfied with their neighbourhood are more likely to have recently moved than not. However, allowing this relationship to vary according to tenure reveals a positive additional effect associated with homeowners and, conversely, a negative additional effect for renters of all types. In other words, the higher level of neighbourhood satisfaction associated with residential movers is lessened for those who rent. Such findings may again be expected given that movers who own their home are more likely to have invested for the long term and are thus more likely to have chosen an area/neighbourhood that fits their housing, lifestyle, and consumption preferences. The difference is particularly pronounced when comparing homeowners with private renters, the latter being the tenure group most closely associated with short-term residential durations (Bailey & Livingston, 2005).

CONCLUSION

Through the use of large-scale commercial microdata, this paper has sought to explore how various complex and interlinked micro-level characteristics of movers and non-movers vary according to broad life-course stages. Whereas previous studies have demonstrated associations between basic demographic and socio-economic characteristics and movement propensities, the availability of the Acxiom ROP data has provided an opportunity to develop new insights into the consistent/dynamic nature of a wide variety of characteristics associated with the propensity to change residence, at different points in the life course. Although various characteristics have been analysed and discussed, it is the more personal/subjective and understudied relationships that we choose to highlight in our conclusion.

The findings presented are important in revealing what appears to be a particularly dynamic relationship between residential mobility and neighbourhood satisfaction. The role of neighbourhood satisfaction is found to be a complex one and appears to be linked strongly to the individual's housing tenure. Indeed, across all of the broad stages in the life course, people who are satisfied with their neighbourhood are more likely to have recently moved than remained *in situ*. Yet a positive additional effect is associated with homeowners and a negative additional effect for renters – regardless of type. In other words, the higher level of neighbourhood satisfaction associated with residential movement is lessened somewhat if the migrants are renters, be it council, housing association, or private, as opposed to homeowners. Where population movement is understood to be a rational utility-maximising outcome and where homeownership for a variety of reasons is thought to encourage longer-term residential duration, it is suggested that recent movers who own their homes are more likely to have chosen a residential environment that more closely matches (satisfies) their housing, lifestyle, and consumption desires. Related to wider evaluations of residential satisfaction, future plans to move are found to be negatively associated with recent residential mobility, especially for those in their early adulthood. It is suggested therefore that individuals, particularly in the young adulthood stage, who undertook a residential move

within 12 months prior to survey, were largely successful in fulfilling their pre-move motivations whether they be university, cohabitation, or career driven. Beyond this, it is probable that very recent movers are less likely to plan a further move given the various forms of additional investment (e.g. time, emotion, and finance) that would be required, an issue that would be likely to increase if we were to reduce the time frame between the last move and the proposed future move still further.

The decision to change residence is clearly influenced by a variety of diverse yet interdependent individual, household, and contextual influences, life course transitions, and key life course events. Yet until recently, analyses of such determinants have been severely restricted because of a scarcity of suitably detailed microdata. However, with the increasing availability of large-scale cross-sectional and longitudinal data sets, with variables that cover topics beyond basic demographic and socio-economic characteristics, the potential to empirically test theorised relationships and to develop new insights into movement behaviour is greater than ever before.

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NOTES

- (1) The Thomas *et al.* (2014) findings show the ROP to be a reliable source of microdata for the model-based analysis of residential mobility.
- (2) The main effect for marital status is interpreted as the effect for women (i.e. the reference category for the gender variable), whereas the interaction terms reflect the additional effect of being male.
- (3) The total effect for men living with a partner in this model is $(-0.258 * 1) + (0.493 * 1) + (0.475 * (1 * 1)) = 0.71$.

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